

**ENVIRONMENTAL ASSESSMENT**  
**APPLICATION OF ESA SECTION 4(d) OPTIONS**  
**FOR**  
**THE OZETTE LAKE**  
**EVOLUTIONARILY SIGNIFICANT UNIT**  
**OF**  
**SOCKEYE SALMON**

National Marine Fisheries Service  
National Oceanic and Atmospheric Administration

**SUMMARY**

Under the authority of the Endangered Species Act, the National Marine Fisheries Service is proposing to apply certain protective regulations to the Ozette Lake Evolutionarily Significant Unit (ESU) of threatened sockeye salmon. This Environmental Assessment (EA) describes and evaluates five alternatives for applying take prohibitions to this ESU. The environmental impacts of the alternative actions were assessed relative to baseline conditions established by existing laws. The results of this analysis indicate that no significant impacts on the human environment are expected to result from implementation of the preferred or potential future alternative actions, or from any combination of those alternatives.

**1. PURPOSE AND NEED FOR ACTION**

Under the authority of the Endangered Species Act (ESA), in 1997 the National Marine Fisheries Service (NMFS) completed a comprehensive status review of six Evolutionarily Significant Units (ESUs) of west coast sockeye salmon (*Oncorhynchus nerka*) (NMFS, 1997). On March 10, 1998, NMFS relied on this status review in proposing to list one ESU (Ozette Lake sockeye) as threatened. That proposed rule summarized information on the life history and ecology, status, and efforts being made to protect the sockeye salmon (63 FR 11750). Biological information, causes of decline, and existing conservation measures are also available from the NMFS website at [www.nwr.noaa.gov](http://www.nwr.noaa.gov). On March 16, 1999, NMFS issued a final rule listing this ESU as threatened (64 FR 14528).

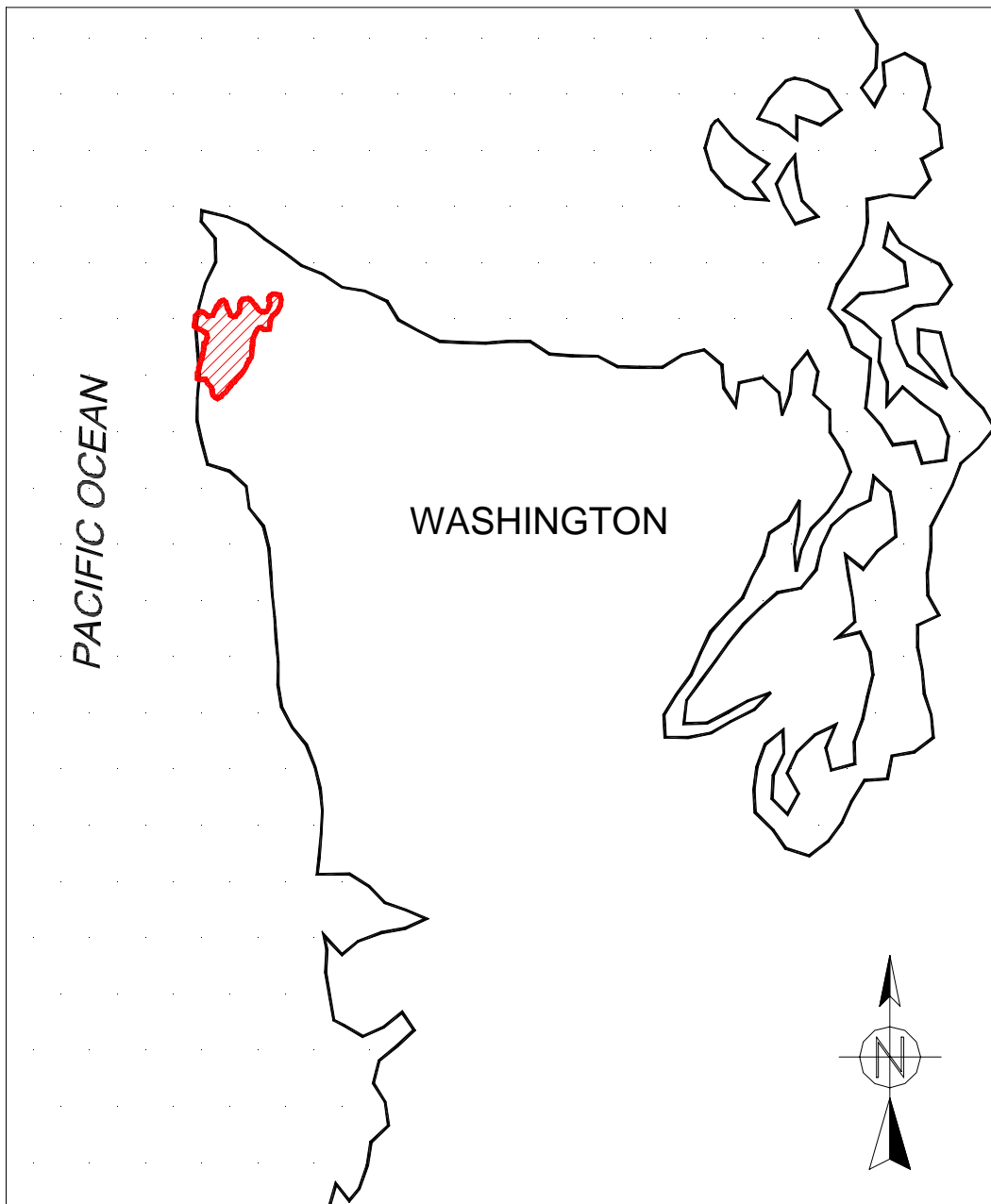
Section 9(a) of the ESA prohibits certain activities that directly or incidentally take species that are listed as endangered. These prohibitions make it illegal for any person subject to the jurisdiction of the United States to take (take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect, or to attempt any of these activities),

import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered species. The prohibitions are automatically invoked when a species is listed as endangered, but not when a species is listed as threatened. Section 4(d) of the ESA provides that whenever a species is listed as threatened, the Secretary of Commerce shall issue such regulations as are deemed necessary and advisable to provide for the conservation of the species. A 4(d) regulation could range from very minimal provisions to imposition of all of the prohibitions applicable to endangered species under Section 9(a). In crafting a 4(d) rule for Ozette Lake sockeye, NMFS has recognized that while many ongoing protective efforts are likely to promote sockeye conservation, these efforts alone are not sufficient to achieve long-term conservation and recovery of this ESU and that therefore protective regulations are necessary and advisable.

This EA describes and evaluates five alternative actions (alternative ESA section 4(d) rules) for protection of Ozette Lake sockeye. The environmental impacts of the alternative actions were assessed relative to baseline conditions established by existing laws. This EA was prepared in accordance with Council on Environmental Quality regulations for implementing NEPA (40 CFR Parts 1500-1508) and National Oceanographic and Atmospheric Administration environmental review procedures (Administrative Order 216-6, May 20, 1999). The lead agency for NEPA decision making in the matter at hand is NMFS.

The final listing of the Ozette Lake sockeye salmon ESU was based on the specific criteria in the ESA. With that listing, section 7 of the ESA applies. Section 7 of the ESA requires federal agencies to consult with NMFS and to ensure that activities they authorize, fund or conduct are not likely to jeopardize the continued existence of a species listed as threatened or endangered. Examples of federal activities that may affect listed sockeye salmon include operation of federal dams and hatcheries, consultation with tribes on fisheries management plans, marine fishery regulations, federal land management activities and federal licensing and permitting for such activities as silviculture, mining, road construction, dam construction, discharge of fill material, and stream channelization or diversion. Development actions and harvest in the marine context are dealt with through section 7. Regardless of the status of Section 4(d) regulations, federal

## OZETTE LAKE SOCKEYE ESU



activities may be authorized to incidentally take threatened and endangered species through a Section 7 consultation process. Federal activities that may affect threatened or endangered species can proceed as long as Section 7 consultation has been completed and such activities are done in accordance with any terms and conditions provided by NMFS in an incidental take statement accompanied by a biological opinion.

This EA addresses the added protections for the environment and for the listed ESU that results from the take prohibitions imposed through section 4(d), over and above those that accrue from the listing actions and section 7.

This EA describes five 4(d) actions being considered by NMFS. The preferred alternative applies Section 9(a) take prohibitions to most categories of activities, except for several programs or activities that provide adequate protection and conservation for the listed salmonids and for which additional federal protections are therefore not necessary and advisable. Environmental impacts are evaluated for the preferred alternative, a no action alternative, a full action alternative (all take prohibitions with no limitations), and two additional alternatives.

## **2. AFFECTED ENVIRONMENT**

The Ozette Lake sockeye ESU is located in Clallam county in Washington. This ESU consists of sockeye salmon that return to Ozette Lake through the Ozette River and currently spawn primarily in lakeshore upwelling areas in Ozette Lake. Some spawning may also occur downstream of Ozette Lake in the Ozette River or in Coal Creek, a tributary to the Ozette River. Spawning in tributary streams of Ozette Lake occurred historically but has not been reported for many years. Ozette Lake kokanee, which spawn primarily in tributaries to Ozette Lake and have been observed spawning in lakeshore upwelling areas, are not considered part of this ESU because of the very large genetic difference between this fish and the lake spawning sockeye. However, resident sockeye observed spawning in Ozette Lake with anadromous sockeye are included in this ESU.

The decline of Ozette River sockeye salmon is likely the result of a combinations of factors. The initial factors for decline were identified as logging and over fishing in the 1940s and 1950s. More recently-identified causal factors include introduced species, predation, loss of tributary populations, decline in quality of beach-spawning habitat, temporarily unfavorable oceanic conditions, and introduced diseases. Intra-and inter-specific competition is not thought to be a contributing factor.

The peak harvest of sockeye salmon in the Ozette Lake area was 18,000 fish in 1949. Commercial harvest ended in 1974, and no recreational or ceremonial/subsistence fisheries have occurred since 1982. In spite of the curtailment of these fisheries, Ozette Lake sockeye have not returned to tributaries to spawn, which may be the primary reason why run size has not increased. Investigators have cited three main problems related to

road-building and logging that have limited stream spawning habitat: increased magnitude and frequency of peak flows, stream-bed scouring, and degraded water quality.

The western shore of the Lake is part of the Olympic National Park, and the remainder of the land surrounding the lake is privately owned. The Makah and Quileute Native American tribes have land adjacent to the lake, on the north and south sides, respectively. Outside that portion in Olympic National Park, virtually the entire watershed of Ozette Lake has been logged.

There are two animals in this ESU listed as Federally endangered and five listed as threatened. The endangered animals are the brown pelican (*Pelecanus occidentalis*) and the American peregrine falcon (*Falco peregrinus anatum*). The five animals listed as threatened include the marbled murrelet (*Brachyramphus marmoratus*), Western snowy plover (*Charadrius alexandrinus nivosus*), Northern spotted owl (*Strix occidentalis caurina*), Oregon silverspot butterfly (*Speyeria zerene hippolyta*) and the bald eagle (*Haliaeetus leucocephalus*). No plants are listed in this ESU.

### 3. ALTERNATIVE ACTIONS

This EA addresses the following five alternatives for applying ESA Section 4(d) provisions to the threatened listing of the Ozette Lake sockeye salmon:

- **Full Action Alternative:** application of all Section 9(a) take prohibitions with no limitations beyond Section 10 provisions.
- **Preferred Alternative:** application of Section 9(a) take prohibitions generally except with respect to Section 10 provisions and certain categories of activities that adequately protect or conserve the listed species and for which additional federal protections are therefore not necessary and advisable.
- **Alternative A:** application of the same prohibitions and limitations on take prohibitions as described for the Preferred Alternative plus future additional limitations for actions that NMFS considers adequate to protect sockeye.
- **Alternative B:** limiting the application of Section 9(a) take prohibitions for all activities conducted in accordance with state salmon conservation plans that NMFS considers adequate to protect sockeye salmon.
- **No Action Alternative:** no Section 9(a) take prohibitions or other protective regulations.

The preferred alternative has been developed because NMFS believes that its prohibitions are those necessary and advisable to conserve and restore sockeye in the Ozette Lake ESU and because the future alternatives (A and B) are not feasible at this time. Alternatives A and B may be implemented by NMFS at a later date, as state or local watershed plans and

regulations continue to develop. For that reason, the alternatives are explained here and are compared to the preferred action with regard to potential environmental impacts.

### **3.1 Full Action Alternative**

The full action alternative is the implementation of all Section 9(a) prohibitions with no limitations. NMFS would have adopted this alternative if there were no categories of action governed by other entities in a manner adequate for the protection of Ozette Lake sockeye. NMFS considers that universal implementation of all Section 9(a) prohibitions is not necessary because of particular conservation and management efforts by other governmental entities. These conservation and management efforts include brood stock collection programs; scientific research activities; habitat restoration activities; and timber harvest regulation.

Section 9(a) prohibitions focus on the commerce, transport, and taking of listed species. ESA defines take broadly to include not only killing but any activity that harms a listed species or alter its habitat in a manner detrimental to the continued existence of the species. Prohibitions on take of individuals apply to direct harvest, adverse hatchery-related actions, and impacts due to disturbance of habitat. These prohibitions would apply to all Ozette Lake sockeye.

Activities that NMFS believes could potentially harm, injure or kill sockeye and result in “take” include, but are not limited to:

- Land-use activities that adversely affect sockeye habitat (e.g., logging, grazing, farming or road construction particularly when conducted in riparian areas or areas susceptible to mass wasting and surface erosion);
- Destruction or alteration of sockeye habitat, such as removal of large woody debris and "sinker logs" or riparian shade canopy, dredging, discharge of fill material, draining, ditching, diverting, blocking, or altering stream channels or surface or ground water flow (except for the habitat alteration activities that are within the limitation on take prohibitions);
- Discharges or dumping of toxic chemicals or other pollutants (e.g., sewage, oil, gasoline) into waters or riparian areas supporting the listed sockeye, particularly when done outside of a valid permit for the discharge;
- Violation of discharge permits through actions that actually impact water quality;
- Pesticide applications that adversely affect the biological requirements of the species;
- Interstate and foreign commerce of listed sockeye and import/export of listed sockeye without an ESA permit, unless the fish were harvested pursuant to this rule;
- Collecting or handling listed sockeye;

- Introduction of non-native species likely to prey on listed sockeye or displace them from their habitat;
- Water withdrawals in areas where important spawning or rearing habitats may be adversely affected.

Individuals and entities could be expected to alter proposed or ongoing activities to avoid violating the 4(d) rule. Also, Section 10 of the ESA allows parties whose activities may result in take of a listed species to obtain a take permit for scientific research or enhancement actions [Section 10(a)(1)(A)]. Section 10(a)(1)(B) permits can authorize take which is an incidental result of (rather than the purpose of) conduct of some otherwise lawful activity. If a section 10 permit is issued, the Section 9(a) take prohibitions no longer apply to the permitted action.

### **3.2 Preferred Alternative**

At present, NMFS proposes to apply Section 9(a) prohibitions, as described above, to the take of Ozette Lake sockeye, except for certain categories of activities that provide for the conservation of or are otherwise adequately protective of the threatened sockeye.

#### Limits on Take Prohibitions

The categories of activity on which NMFS finds it not necessary and advisable to impose take prohibitions include those described in the interim 4(d) rule developed for threatened Southern Oregon/Northern California Coast coho ESU (62 FR 38479, July 18, 1997), with several additions. Under specified conditions and in appropriate geographic areas, these include: (1) activities conducted in accord with ESA incidental take authorization through ESA sections 7 or 10; (2) ongoing scientific research activities, for a period of six months; (3) emergency actions related to injured, stranded, or dead salmonids; (4) fishery management activities; (5) hatchery and genetic management programs; (6) scientific research activities permitted or conducted by the states; (7) state, local, and private habitat restoration activities; (8) road maintenance activities in Oregon; (9) certain park maintenance activities in the City of Portland, Oregon; (10) certain development activities within urban areas; (11) properly screened water diversion devices; and (12) forest management activities within the state of Washington. A summary of each of the limitations that is applicable for Ozette Lake sockeye is provided below.

#### *Fishery Management Activities*

State fishery management programs that are specifically implemented to minimize impacts of recreational fisheries can be developed into Fishery Management and Evaluation Plans (FMEPs). FMEPs must include measures to minimize and adequately limit take of listed sockeye. The FMEPs also need to include monitoring of take of listed sockeye, annual coordination with NMFS on the fishing regulations, and providing

NMFS with access to all data and reports related to the program. NMFS believes that a fishery program with these characteristics will adequately protect sockeye. Once an FMEP is deemed protective of sockeye by NMFS it will enter into a Memorandum of Agreement with the state to insure adequate implementation of the plan. Prior to finding any new or amended FMEP adequate, NMFS will make the plan available for public review and comment for a period of not less than 30 days.

#### *Artificial Propagation Activities*

In order for a sockeye artificial production program to be free of take prohibitions, a state must develop a Hatchery and Genetic Management Plan (HGMP) and assure adequate implementation through an MOA with NMFS.

Hatchery stocks can, however, be considered detrimental to the naturally spawning populations. There is considerable concern that hatchery fish have a greater degree of straying to other non-natal areas where they cross-breed with naturally occurring populations. The result can be significant loss of fitness in local populations and loss of diversity among populations and must be managed to avoid impacts to naturally produced stocks. In order to ensure that broodstock collection and associated production is appropriate, NMFS has developed criteria for evaluating HGMPs. These criteria include strict limits on collecting broodstock unless the population is functioning at or above a viable population threshold. If it is not collection would be appropriate only if the intended goal of the collection program is strictly to enhance the propagation or survival of the listed ESU, or in limited circumstances where the donor population is well above critical thresholds although not yet viable, where the collection will not appreciably slow the attainment of viable status.

An HGMP also must appropriately prioritize broodstock collection programs, demonstrate adequate existing fishery management programs and regulations, demonstrate adequate hatchery facilities, contain effective monitoring efforts, and include specific hatchery practice protocols aimed at conserving the genetic integrity of listed, naturally spawning sockeye.

#### *Scientific Research and Monitoring Activities*

In carrying out their fishery management responsibilities, Washington state fishery management agencies conduct or permit a wide range of scientific research and monitoring studies that may provide information relevant to Ozette Lake sockeye. In general, NMFS concludes that these activities are vital for improving our understanding of the status and risks facing Ozette Lake sockeye and will provide critical information for assessing the effectiveness of current and future management practices. Therefore NMFS does not find it necessary and advisable to prohibit take of threatened Ozette Lake sockeye associated with scientific research and monitoring, provided that: (1) research and monitoring involving directed take of sockeye is conducted or supervised by Washington Department of Fish and Wildlife (WDFW) personnel; (2) WDFW provides



NMFS with a list of all research and monitoring activities involving Ozette Lake sockeye directed take planned for the coming year for NMFS' review and approval; (3) WDFW provides NMFS with the results of research and monitoring studies (including a report of the directed take resulting from these studies) directed at Ozette Lake sockeye; (4) WDFW provides NMFS annually with a list of all research and monitoring studies it permits that may incidentally take listed sockeye during the coming year and report the level of incidental take from the previous year's research and monitoring activities, for NMFS' review and approval; and (5) research and monitoring activities involving electrofishing in any body of water known to or suspected to contain Ozette Lake sockeye comply with "Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act" (NMFS 1998), or else requires a section 10 research permit from NMFS prior to commencing operations.

#### *Habitat Restoration Activities*

Under the preferred alternative, certain habitat restoration activities that are likely to contribute to conserving Ozette Lake sockeye are not subject to the take prohibitions. NMFS feels that projects based on a watershed or basin scale are likely to be the most beneficial at conserving salmonids. Incidental take of Ozette Lake sockeye that results from a habitat restoration activity would not be prohibited provided that Washington has certified in writing that the activity is part of a watershed conservation plan consistent with the watershed plan guidelines that NMFS has approved, and NMFS concurs. Until a watershed conservation plan is implemented or until two years following the effective date of a final 4(d) rule (whichever comes first), incidental take resulting from six specified categories of habitat restoration activity would not be prohibited if conducted in compliance with conditions and guidance listed in the proposed rule. If no conservation plan has been approved for a watershed after two years following the effective date of the interim rule, the general Section 9(a) take prohibitions applicable to all other habitat-affecting activities would apply to individual restoration activities.

#### *Water Diversion Screening*

A widely recognized cause of mortality among anadromous fish is operation of water diversions without adequate screening. While state laws and Federal programs have long recognized these problems and encouraged or required adequate screening of diversion ditches, structures, and pumps, large numbers of diversions are not adequately screened and remain a threat, particularly to juvenile salmonids. This proposed rule would limit the application of take prohibitions for any diversion screened in accord with NMFS' Juvenile Fish Screening Criteria, Northwest Region, Revised February 16, 1995 with Addendum of May 9, 1996. The proposed limitation on take prohibitions applies only to physical impacts on listed fish due to entrainment or similar impacts of the act of diverting.

#### *New Urban Density Development*

As a general matter, significant new urban scale developments have the potential to degrade salmonid habitat and to injure or kill salmonids through a variety of impacts, but with appropriate safeguards can be specifically tailored to minimize impacts on listed salmonids to an extent that makes additional Federal protections unnecessary for conservation of the listed ESU. NMFS proposes not to apply take prohibitions to new developments governed by and conducted in accord with adequate city ordinances that help conserve anadromous salmonids. Ordinances must assure that developments will adequately address twelve issues, including appropriate siting, storm water discharge impacts to water quality, quantity, and hydrograph characteristics, riparian buffers, avoidance of stream crossings by roads wherever possible, protecting historic stream meander patterns and wetlands, preserving flood capacity, and erosion control. Where NMFS finds ordinances, imposition of take prohibitions is not necessary and advisable. As a practical matter, this limitation on the take prohibitions probably would not affect the Ozette Lake sockeye ESU.

### *Forest Management in Washington*

In the State of Washington, discussions among timber industry, tribes, state and federal agencies, and interest groups led to an April 29, 1999 Forests and Fish Report (FFR) to Governor Locke which provides important improvements in forest practice regulation. If implemented by the Washington Forest Practices Board in a form at least as protective as laid out in the FFR, these will provide a significant level of protection to listed salmonids, including Ozette Lake sockeye. The FFR also mandates that all existing forest roads be inventoried for potential impacts on salmonids through culvert inadequacies, erosion, slope failures, and the like, and all needed improvements be completed within 15 years. Because of the substantial detrimental impacts of inadequately sited, constructed or maintained forest roads on salmonid habitat, this feature of the overall FFR provides a significant conservation benefit for listed ESUs in Washington. NMFS does not propose to apply section 9 take prohibitions to non-federal forest management activity conducted in the State of Washington in compliance with the FFR.

### **3.3 Alternative A**

Alternative A is similar to the preferred action alternative, with additional limitations on the Section 9(a) take prohibitions. These additional limitations may be for state laws, regulations, and policies that NMFS believes will improve habitat conditions for sockeye or otherwise help to minimize incidental take of listed, naturally-spawning sockeye. Some of the ongoing activities and potential future activities that may provide for conservation of sockeye include improvements to water quality, water quantity, riparian zone and land management, channel maintenance, and cooperative planning and public involvement.

Washington has several regulations, policies, agreements, or processes which are aimed at improving habitat for salmonids, many of which involve cooperative forums with local

interest groups and Native American tribes. Examples of these programs include the Timber/Fish/Wildlife Agreement and draft Statewide Strategy to Recover Salmon. While not yet at a point that warrants limiting the take prohibitions, Washington's Statewide Strategy to Recover Salmon includes a number of programs that may mature to a point where take prohibitions are no longer necessary. These include efforts to see that stream flows meet the needs of naturally spawned fish; changes in agricultural practices, timber harvest, urban stormwater programs to improve fish habitat; improvement to fish passage, and reducing impacts of hydropower operations. An important part of Washington's strategy addresses funding, enforcement, and education needs.

### **3.4 Alternative B**

With Alternative B, the State of Washington would have developed a fully adequate comprehensive salmon conservation plan adequate to ameliorate all factors for decline for sockeye in this ESU. The protective measures mentioned in alternative A and others would be assembled into a comprehensive plan for each watershed, basin or other geographic unit. If such a plan was presented to NMFS and found fully adequate, there would be no need for implementation of Section 9(a) take prohibitions, except where an activity did not follow the plan. All activities conducted in accordance with the plan would be free of the Section 9(a) take prohibitions and would therefore not require a Section 10 permit.

NMFS has provided guidance as to the critical elements of a salmon conservation plan. A plan must identify major factors that contributed to sockeye decline, establish conservation/restoration action priorities, establish objectives and timelines for correcting the factors for decline, develop quantifiable criteria and standards by which progress toward objectives can be measured, and adopt actions to achieve objectives. It should address instream and upland habitat conditions, water quality and quantity, land use practices, migration barriers, and any other impediment to sockeye recovery. The plan must provide a high level of certainty that the actions will be implemented (including necessary authorizations, commitments, funding, staffing, and enforcement measures). It must also include a comprehensive monitoring and reporting program that is effective at measuring whether objectives are being met and determining whether the population is increasing or decreasing. The plan should consider other Federal, state, tribal, local, and other activities and try to incorporate those activities. Finally, the plan should use an adaptive management approach that can be used to generate needed information.

### **3.5 No Action Alternative**

The no action alternative would reflect a decision by NMFS that no protective regulations are needed for the conservation of sockeye in the Ozette Lake ESU. NMFS has not proposed the no action alternative because it does not find that existing controls would provide a sufficient level of protection to sockeye.

#### **4. ENVIRONMENTAL CONSEQUENCES**

To determine the potential environmental impacts of the preferred action alternative, an impact checklist was developed. The checklist was used as a tool to assess any potentially significant impacts of the preferred alternative relative to the least protective measure (the no action alternative). The likelihood of any conservation action occurring at a particular location or time – and, thus impacts of this action on particular environmental attributes or resources – is unpredictable. However, it is expected that the four action alternatives – or any combination of these four action alternatives adopted in the 4(d) rule – would result in the same or similar outcome in terms of non-federal actions taken to conserve threatened sockeye. The primary differences would reside in the process and timing of these actions. With the Full Action Alternative, NMFS would assume greater responsibility for directly ensuring that take prohibitions are properly implemented and enforced (although development and enforcement of state conservation plans and regulations would continue). The preferred and future alternatives (A and B) reflect different scopes of adequately protective state programs which may make additional NMFS prohibitions unnecessary (although NMFS would regularly evaluate whether the programs were achieving the expected level of protection and conservation, and could at any time impose take prohibitions or other protections, as needed). However, the ultimate impact of any course of action (other than the no-action alternative) on both threatened sockeye and on the environmental features within the range of the threatened Ozette Lake ESU would be similar.

Regardless of which alternative is selected, it is expected that measurable changes in response to implementation of the 4(d) rule would not happen immediately – it would take some time to broaden understanding of the problems, develop corrective rules and policies that are appropriate and effective, and resolve the inevitable administrative and legal challenges. Therefore, the most reasonable scenario is that additional measures protective of threatened sockeye would be applied gradually, whether in response to the risks of ESA enforcement, or as a result of further development of state or voluntary programs to accommodate sockeye needs. Consequently, resulting actions and their environmental impacts are not expected to be significantly different in either substance or timing among the four action alternatives or any combination of these alternatives.

A summary of each of the categories (land use and planning, earth, water, air quality, transportation/circulation, noise, biological resources, energy and mineral resources, public service, utilities and service systems, aesthetics, cultural resources, and recreation) follows the checklist. Each summary addresses existing conditions and incremental impacts expected from implementation of the preferred alternative and the other alternatives. The incremental impact is determined from baseline conditions, which include all existing regulations, policies and programs that directly or indirectly contribute to the protection and restoration of sockeye and is considered the same as the no action alternative. For example, improvements in the water quality and habitat in streams important to sockeye are required under the Clean Water Act and other

regulations, so implementation of the sockeye 4(d) option is expected to be insignificant or potentially result in a positive effect because of additional efforts to protect or improve water quality. In addition, any future regulation, policy, program, or plan that NMFS feels is protective of sockeye and for which NMFS limits the Section 9(a) prohibitions, will further reduce the impacts of the 4(d) rule. All of the potential impacts will be due to those state or other governmental regulations, policies, programs, or plans, rather than the 4(d) rule itself.

A discussion of the potential impacts to sockeye as the result of implementation of a 4(d) option is included in the biological resources section under impact summaries. The 4(d) option selected will be designed to improve the habitat and reproductive success of sockeye populations and thus be protective of threatened sockeye. In general, the least protective option is the no action alternative, while all of the other options are intended to achieve similar results with regard to protection of sockeye. NMFS will not implement a rule with limits on application of the Section 9(a) prohibitions, unless it is confident that even with those limitations, Ozette Lake sockeye will be adequately protected.

**Table 4-1.** NEPA Compliance Checklist for evaluating potential negative impacts of options of protective regulations for the threatened Ozette Lake sockeye ESU.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact/ Positive Effect
<b>LAND USE AND PLANNING.</b> Would Implementation of the 4(d) options result in:				
a) Conflict with general plan designation or zoning?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with applicable environmental plans or policies adopted by agencies with jurisdiction over the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Incompatibility with existing land use in the vicinity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Effects on agricultural resources or operations (e.g., impacts to soils or farmlands, or impacts from incompatible land uses)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>EARTH.</b> Would implementation of the 4(d) options result in:				
a) Unstable earth conditions or in changes in geologic substructures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Disruptions, displacements, compaction or overcovering of the soil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Change in topography or ground surface relief features?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact/ Positive Effect
d) Any increase in wind or water erosion of soils, either on or off the site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Changes in deposition or erosion of beaches and, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean of any bay, inlet or lake?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) The destruction, covering or modification of any unique geologic or physical features.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>WATER.</b> Would implementation of the 4(d) options result in:				
a) Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Discharge into surface waters or other alteration of surface water quality (e.g., temperature, dissolved oxygen or turbidity)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Changes in the amount of surface water in any water body?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Changes in currents, or the course of direction of water movements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations, or through substantial loss of groundwater recharge capability?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Altered direction or rate of flow of groundwater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impacts to groundwater quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Substantial reduction in the amount of groundwater otherwise available for public water supplies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>AIR QUALITY.</b> Would implementation of the 4(d) options result in:				
a) Violation of any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>TRANSPORTATION/CIRCULATION.</b> Would implementation of the 4(d) options result in:				
a) Increased vehicle trips or traffic congestion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Rail, waterborne or air traffic impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>NOISE.</b> Would implementation of the 4(d) options result in:				
a) Increases in existing noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of people to severe noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>BIOLOGICAL RESOURCES.</b> Would implementation of the 4(d) options result in:				

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact/ Positive Effect
a) Endangered, threatened, or rare species or their habitats (including but not limited to plants, fish, insects, animals, and birds)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Locally designated species (e.g., heritage trees)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Locally designated natural communities (e.g., oak forest, coastal habitat, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Wetland habitat (e.g., marsh, riparian, and vernal pool)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Wildlife dispersal or migration corridors?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>ENERGY AND MINERAL RESOURCES.</b> Would implementation of the 4(d) options result in:				
a) Conflict with adopted energy conservation plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Use of non-renewable resources in a wasteful and inefficient manner?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>PUBLIC SERVICES.</b> Would implementation of the 4(d) options result in:				
a) Effect to Governmental services (including enforcement and permitting)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>UTILITIES AND SERVICE SYSTEMS.</b> Would implementation of the 4(d) options result in a need for new systems or supplies, or substantial alterations to the following utilities:				
a) Power or natural gas?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Local or regional water treatment or distribution facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Sewer or septic tanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Storm water drainage?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Solid waste disposal?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Local or regional water supplies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>AESTHETICS.</b> Would implementation of the 4(d) options result in:				
a) Demonstrable negative aesthetic effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>CULTURAL RESOURCES.</b> Would implementation of the 4(d) options result in:				
a) Disturbance of paleontological resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Disturbance of archaeological resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Effects to historical resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) The potential to cause a physical change which would affect unique ethnic cultural values?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Restriction of existing religious or sacred uses within the potential impact area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact/ Positive Effect
f) Restriction of existing subsistence uses within the potential impact area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>RECREATION.</b> Would implementation of the 4(d) options result in:				
a) Effects to existing recreational opportunities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## 4.1 Impact Summaries

### Land Use and Planning

As noted in the proposed rule (Federal Register 1998), land use activities that may require special management considerations for freshwater and estuarine life stages of Ozette Lake sockeye include, but are not limited to: (1) land management, (2) timber harvest, (3) point and non-point water pollution, (4) livestock grazing, (5) habitat restoration, (6) irrigation water withdrawals and returns, (7) mining, (8) road construction, (9) dam operation and maintenance, (10) recreational activities, and (11) dredge and fill activities. Not all of these activities are necessarily of current concern within the Ozette Lake watershed; however, they indicate the potential types of activities that will require consultation in the future before they can proceed.

The preferred alternative is not expected to result in significant negative impacts to or conflicts with land use and planning. Less than significant impacts could result from required changes in zoning, incompatibility with existing land use, and effects on agricultural resources. For example, if grazing, farming or development could potentially result in incidental take of sockeye or their habitat, a Section 10 permit would be required, which would require mitigation and result in a potential impact. Mitigation requirements are difficult to predict, but could range from monitoring to efforts to avoid impacts to purchasing replacement land. Because these activities can be mitigated and because there are existing state and federal laws such as the Clean Water Act that already put constraints on many of these activities, the overall impact is expected to be less than significant. The potential impacts of the future alternatives (A and B) are expected to be less than the other alternatives, because the state or other governmental regulations, policies, programs, and plans would be causing any impacts, rather than the 4(d) option. The 4(d) rule would look more like alternative B as greater state and local (grass-roots) efforts to regulate and enforce the activities that will protect sockeye and their habitat develop. With full implementation of alternative B, there would be few or no expected impacts.

If NMFS chose to implement Section 9(a) take prohibitions without any limitations, potentially significant impacts to these activities could be expected, unless mitigated.



With this alternative, all activities that have the potential to take sockeye or their habitat would require a Section 10 incidental take permit and mitigation regardless of the scale or expected level of take of the project. It is possible that some activities or projects would not be permitted. The no action alternative is expected to have the least impacts to land use and planning activities, since regulations of these activities would essentially remain unchanged as a result of that 4(d) option.

Land use and planning activities that have the potential to improve stream conditions, such as setting up stream side riparian buffer zones, will most likely improve channel structure and water quality and thus improve stream conditions for sockeye. These activities are expected to result from all of the alternatives, except the no action alternative.

## **Earth**

Habitat restoration efforts implemented as part of the full action, preferred, and future (A and B) alternatives are expected to have positive effects on erosional characteristics in watersheds containing sockeye, and therefore would not result in significant negative impacts. Typical habitat restoration projects include activities to stabilize banks and restore natural channel processes through stream flows and land use activity changes. In addition to potential land use changes protecting riparian zones, these measures would lead to revegetation, which in turn would reduce the erosion and transport of surface soils to the stream. Such activities could improve the water quality of the streams and potentially conserve soil conditions for agricultural and other uses. In some cases, the reduction in transport of sediments may increase the life of downstream reservoirs.

Under the no action alternative, improvements in control of sedimentation and streambed conditions could occur due to conservation measures planned by state and local agencies, but would not be as a result of implementing the 4(d) option. The no action alternative is therefore not expected to result in either positive or negative impacts to geologic (earth) features or conditions.

Activities that result in reduced erosion and therefore improved insect production and spawning habitat, as well as those that improve riparian canopy closure and thus stream temperatures, will benefit sockeye. These activities will most likely result from all of the 4(d) alternatives, except the no action alternative. As with land use and planning, alternative B may prove to be most efficient and perhaps effective at protecting sockeye and their habitat, because it will involve activities at all levels.

## **Water**

Improvements in water quality and habitat in streams important to sockeye are already required by various Federal and state regulations. The preferred action alternative does

not include any limitations on the take prohibitions directly related to water resources. Ongoing and future state or local habitat restoration/conservation efforts could result in additional water quantity and quality regulations. If these regulations result in improved water quantity and quality conditions that NMFS believes are adequate for the conservation of listed sockeye, NMFS may implement one of the future alternatives that would limit application of the Section 9(a) take prohibitions for activities covered under these regulations.

Implementation of state or local regulations, policies, programs, or plans for increasing water in streams to restore sockeye could have an effect on surface water quality and potentially surface and groundwater quantity. Such changes could include limits on future construction of water supply dams or expanded controls on the withdrawal of water for irrigation or domestic use. If NMFS feels these regulations are adequate for the protection of sockeye, it may limit the application of take prohibitions for them as part of any future alternatives (A & B). These effects are expected to be positive or beneficial for aquatic resources including sockeye, and therefore would not result in significant impacts to water quality or quantity.

Implementation of the preferred alternative is expected to have a less than significant impact on the availability of public water supplies because it does not have any specific water quality or quantity parameters, and because other laws already exist to enforce water quality and quantity measures. Implementation of the future alternatives is also expected to result in a less than significant impact to public water supplies, because the policies governing water supplies would be implemented by the state or other governmental unit and would therefore not be a result of either of those 4(d) options. NMFS expects that the cooperative watershed planning process is the best way to avoid conflicts with human water use and water for aquatic resources and that measures can be implemented in a way that avoids significant impacts to public water supplies while benefitting sockeye.

The full action alternative may result in potentially significant positive impacts. Projects where water supply impacts may result in incidental take of sockeye or their habitat would require a Section 10 permit and may require mitigation such as water conservation, purchasing alternative water supplies, monitoring, and habitat restoration. The full action alternative is expected to have a positive effect on water resources, potentially including restoring a more natural stream flow regime, increasing ground water recharge, and improving water quality.

With the no action alternative, actions to improve water quality, groundwater, or surface water flow may still be taken by states or other governments, but the alternative itself would not result in a significant impact. Water quality, groundwater and surface water flow could be reduced if existing laws, regulations, policies, or programs are not adequate for the conservation of water resources and therefore could result in an impact to sockeye or their habitat.

### **Air Quality**

None of the five 4(d) alternatives is expected to significantly impact air quality. Improved habitat conservation planning may lead to reduced soil exposure around streams which could result in reduced concentrations of suspended particulate matter. The changes are expected to be small, geographically isolated, and insignificant to both air quality and sockeye.

### **Transportation/Circulation**

None of the five alternatives is expected to have significant impact on transportation or traffic patterns. Existing transportation systems will not be significantly impacted.

### **Noise**

Neither the preferred action alternative nor any of the other alternatives for the Ozette Lake sockeye ESU are expected to have any significant impact on noise levels.

### **Biological Resources**

Washington is moving in the direction of watershed evaluation and management procedures (e.g., habitat conservation planning) for improving aquatic and terrestrial habitats. Measures taken to improve water quality, water quantity, stream channel, riparian and watershed conditions in general will benefit sockeye as well as numerous other plant and animal populations that share habitat with sockeye. Some watersheds that are currently inhabited by sockeye also contain other Federally listed animals and plants that would benefit from habitat improvements and conservation efforts implemented for sockeye. The past and recent ESA listings are expected to broaden the scope of existing plans or accelerate new plan development and implementation.

Implementation of the full, preferred, and future (A and B) alternatives is expected to have a beneficial effect on biological resources, especially sockeye. All of these 4(d) options have the explicit intent of providing for the conservation of sockeye. These options provide for minimizing direct or indirect take of sockeye and/or will include implementation of actions that improve existing habitat conditions for sockeye including, but not limited to, improving water quality and quantity, minimizing impacts from hatchery operations, removing passage barriers, reducing watershed erosion, and restoring riparian vegetation. These options would therefore not result in significant negative impacts to biological resources.

Under the no action alternative, Washington may still implement protective measures for sockeye, but those beneficial effects would not be as a result of the 4(d) rule. However,

this alternative does not require implementation of protective actions. Sockeye would suffer from the lack of any protection. Activities that could potentially take sockeye would not be prohibited by NMFS.

### **Energy and Mineral Resources**

Neither the preferred 4(d) alternative nor the other alternatives are expected to have a measurable effect or significant impact on energy resources in the Ozette Lake sockeye ESU. If the action leads to additional restrictions on mining or extraction of other energy resources, it is expected that this would result in improved conservation actions, benefitting the environment as a whole and would not significantly impact the availability of these resources for human use.

Gravel mining from streambeds may be further curtailed or eliminated in some areas. This may reduce the supply of concrete and other sand and gravel construction materials, but the impact is expected to be minor since other sources of gravel are available from outside the area encompassed by this ESU. In addition, certain additional restrictions may be applied to operating permits to control runoff from spoils piles, resulting in improved soil and water quality.

### **Public Services**

Implementation of the full, preferred, and future alternatives could result in increased local or state permitting or enforcement requirements. The impact is expected to be less than significant, because the necessary permitting and enforcement agencies relative to new project development are already in place in Washington and the change in agency workload is expected to be minimal.

### **Utilities and Service Systems**

The preferred 4(d) alternative, the future alternatives (A and B), or the full action alternative are expected to have less than significant impacts on utilities and service systems. Existing laws and regulations currently involve specific requirements for water treatment, septic tanks, storm water drainage, and solid waste disposal. There would be no impacts from implementation of the no action alternative, which would not require any changes from the existing conditions.

### **Aesthetics**

Implementation of the full, preferred, or future alternatives (A and B) is expected to have positive effects on aesthetics of the environment because of reduced erosion in individual

watersheds. Implementation of the no action alternative would not provide those positive benefits.

### **Cultural Resources**

Long-term positive effects are expected for cultural resources with the implementation of any of the alternatives when compared to the no action alternative. Similar to biological resources, the fisheries related to cultural resources will be protected for future use. Recovery of sockeye populations will improve opportunities for ceremonial and subsistence fisheries in the future.

Implementation of the no action alternative could impact cultural resources, because of inadequate protection of fishery resources and cultural sites with the reliance on existing state and tribal laws, regulations, policies, and programs.

### **Recreation**

Implementation of the preferred 4(d) alternative or either of the future alternatives (A and B) is not expected to have a significant impact on recreational opportunities. Most impacts on recreational fisheries are a result of the decline in numbers of fish. The Washington State fishery and hatchery management plans will aid in maintaining existing recreational fisheries targeted on non-listed, hatchery sockeye and kokanee. Changes in fishing seasons or locations are expected to be minimal and therefore insignificant. Opportunities are expected to increase as sockeye reach recovery, so in the long-term recreation could be affected positively. Implementation of the full action alternative could, in this case, result in a less than significant impact to recreational fishing opportunities, because targeted and incidental take would not be allowed without a Section 10 permit. Implementation of the no action alternative could have a greater long-term impact on recreation, because no action would allow continued impacts on populations that might otherwise rebuild to provide a stronger recreational fishery.

### **Economic Impacts**

An Initial Regulatory Flexibility Analysis (September, 1999) referenced in the proposed rule describes with as much detail as is feasible the economic impacts associated with alternative 4(d) approaches.

## **5. COMPARISON OF THE ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES**

NMFS believes that implementation of the no action alternative would likely not provide adequate protection of sockeye and their habitat. While there are existing mechanisms at

the state and local levels to protect sockeye, in most cases, the impetus for these measures has been the recent listings of Pacific salmonids. Further, if there were no take prohibitions implemented by NMFS, many of these cooperative efforts may take longer to be initiated or may not be initiated at all because of lack of funding or other resources. For this reason, it is expected that the no action alternative could result in impacts to sockeye greater than those expected to occur from the preferred alternative and is not likely to be implemented by NMFS.

Likewise, the full action alternative, which may seem more protective of sockeye and other environmental resources, is not expected to be implemented by NMFS. Implementation of all Section 9(a) take prohibitions protects the resource from many future potential impacts, because of the required Section 10 incidental take process, but it may not protect the resource as effectively and quickly as cooperative efforts that address ongoing activities. Even though a Section 10 permit is required for existing projects, it is often the case with a new listing that many of these continue for years without one. Discussions may be triggered when a permit is required because of a change in operations and could take many years to be initiated. In addition, the Section 10 process does not often allow watershed wide impacts to be addressed (except when Habitat Conservation Plans are developed), but focuses only on independent project impacts that may or may not lead to the recovery of sockeye. As compared to the no action alternative, the full action alternative would be an improvement over the status quo and would result in less than significant environmental impacts.

NMFS believes that cooperative conservation efforts with federal, state, tribal, and local governments will best protect Ozette Lake sockeye. The type of grassroots efforts currently being implemented and initiated will foster public education and result in watershed restoration and conservation that will better address sockeye needs. NMFS intends to promote additional cooperative efforts, with the ultimate long-term goal being implementation of Alternative B. Implementation of either Alternative A or B, when and if warranted, would represent even more gains in protection and conservation for threatened sockeye.

## **6. FINDING**

NMFS finds that implementation of the preferred alternative or future alternatives (A and B) for implementation of the 4(d) options will not have a significant effect on the environment and that long-term positive environmental effects are expected from these actions. Implementation of the full action alternative has the potential to have a few significant positive impacts. While implementation of the no action alternative has little impact on the elements of the environment reviewed, it does have some potential to have impacts to sockeye and other similar or linked resources greater than those expected to occur from the preferred alternative.

### **Finding of No Significant Impact**

For the reasons discussed in this Environmental Assessment, NMFS believes that approval and implementation of the final rulemaking governing implementation of 4(d) regulations to provide for the conservation of the Ozette Lake sockeye salmon, or the alternatives to that action, would not significantly affect the quality of the human environment.

The anticipated impacts to the population under this action would be negligible. Based upon that finding, the preparation of an Environmental Impact Statement is not required by Section 102(2) of the National Environmental Policy Act or its implementing regulations.

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